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(74) Common Representative: KONINKLIJKE PHILIPS  
ELECTRONICS N.V.; c/o Waxler, Aaron, P.O. Box  
3001, Briarcliff Manor, NY 10510-8001 (US).

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(71) Applicant (*for all designated States except US*): KONIN-  
KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL];  
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

## Declaration under Rule 4.17:

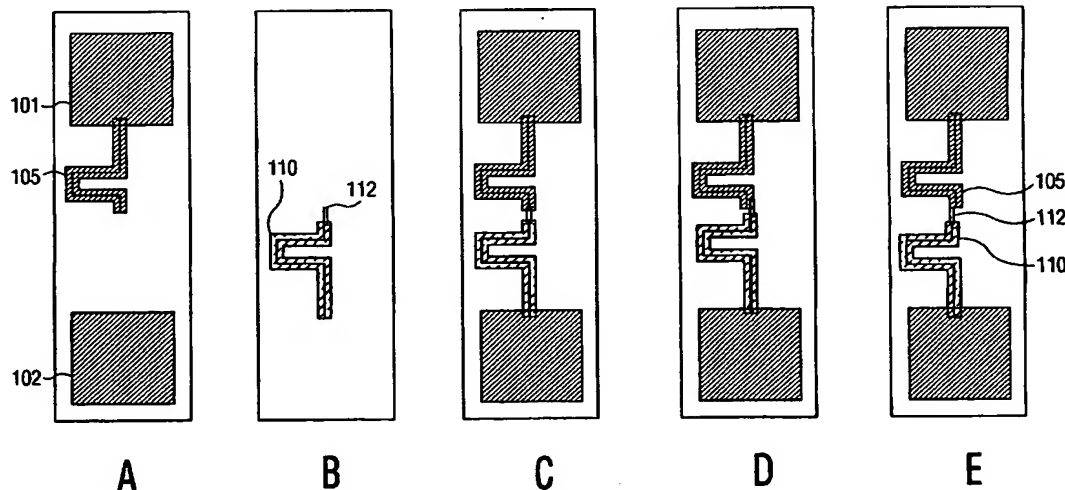
(72) Inventor; and

(75) Inventor/Applicant (*for US only*): AMATO, Joseph, M.  
[US/US]; P.O. Box 3001, Briarcliff Manor, NY 10510-  
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— as to applicant's entitlement to apply for and be granted  
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CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES,

[Continued on next page]

(54) Title: RESISTOR STRUCTURES TO ELECTRICALLY MEASURE UNIDIRECTIONAL MISALIGNMENT OF STITCHED MASKS



(57) Abstract: An apparatus and method for matched variable resistor structures to electrically measure unidirectional misalignment of stitched masks for etched interconnect layers includes a first test pad (101) and a second test pad (102) for measuring resistance therebetween; a first resistive element (105) electrically connected at a first end to the first test pad (101); and, a second resistive element (110) electrically connected at a first end to the second test pad (102). The first resistive element and the second resistive element are electrically connected by a vertical offset (112). The resistance measured between the first test pad and the second test pad is variable in accordance with an alignment of the first resistive element and the second resistive element relative to the vertical offset, see Fig. 1C-E. An indicator may optionally provide an indication that the resistive elements are in alignment.



FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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## INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

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## B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 225 013 B1 (AYELET MARGALIT ILOVICH ET AL) 1 May 2001 (2001-05-01) column 1, line 5-8 column 2, line 32-41 column 3, line 32-48 column 10, line 55 -column 11, line 12; claim 20; figures 2,3,15,16 ---	1-13
Y	US 6 393 714 B1 (LOOK KEVIN T ET AL) 28 May 2002 (2002-05-28) column 1, line 5-8 column 3, line 66 -column 5, line 3; figures 1A,1B,4B --- -/--	1-13

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax (+31-70) 340-3016

Authorized officer

Prasse, T

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 571 538 A (CHOW PEI-MING D) 18 February 1986 (1986-02-18) column 1, line 8-12 column 2, line 36 -column 4, line 29; figures 1-4 -----	1-13
A	DE 38 31 086 C (TEXAS INSTRUMENTS DEUTSCHLAND GMBH) 8 February 1990 (1990-02-08) column 1, line 3-9 column 2, line 67 -column 4, line 42; figure 1 -----	1,4-6,9

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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US 6393714	B1	28-05-2002	WO 0163662 A2 30-08-2001
US 4571538	A	18-02-1986	NONE
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